TEJUS

Name of the work: Widening of Major Sandeep Unnikrishnan Road from Doddaballapura Road to Yelahanka Bus stand road towards BWSSB water tank side in ward No.04

Contractor/Agency : Sri.Uday Shetty

Name of the Client : Executive Engineer, Project Division
Yelahanka Zone, BBMP, Bangalore.

Estimated Cost : Rs.200.00 Lakhs

Name of Bill : 2nd and Final Bill

In the Presence of : (a) V.C.Priyadarshani
Assistant Engineer, BBMP, Bangalore.
: (b) Jagadish .S
Assistant Executive Engineer, BBMP, Bangalore
: (b) Mr. Mahesh, Site Engineer
M/s Tejus Consultants
: (c) Sri.Uday Shetty, Bangalore.

Sl. No.	Description of the Item	Comments/observation
1.	Removing R.S Slab of Drain and Stacking	Work done up to the billed quantity and quantity is satisfactory
2.	SSR'23 M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3	Work done up to the billed quantity and quantity is satisfactory
3.	SSR'23 M200-13.1. Dismantling of existing structures like culverts, Bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including TRP and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceble material and stacking the serviable material with all lifts complete as per specifications. 1. By mechanical means, A. Cement concrete Grade M-15 & M-20	Work done up to the billed quantity and quantity is satisfactory
4.	SSR 4-1.2 Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification	Work done up to the billed quantity and quantity is satisfactory

	No. KBS 4.1, 4.2.	
5	Providing and laying reinforced cement concrete pipe NP2 of 300mm dia for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour curing complete as per specifications. Specification No.KSRB 1000, 2300 MOST Specification No. 1000 / 2300	Work done up to the billed quantity and quantity is satisfactory
6	KSRB 12-8.1 : Constructing brick masonry inspection chamber 600x600mm, and 450mm depth, (clear inside dimension) for single pipeline, using table moulded non-modular bricks of class designation 50 in cement mortar 1:5, C.I cover withframe (light duty) 600x600mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23kg and weight of frame 15 kg) R.C.C. top slab with cement concrete M 15 with 20mm and downsize granite metal, foundation concrete M 5 with 40mm and downsize granite metal inside plastering 12mm thick with cement mortar 1:3, finish smooth with a floating coat of cement on walls and bed concrete complete as per standard design including cost of materials, labour charges, curing complete as per specifications. Specification No. KBS	Work done up to the billed quantity and quantity is satisfactory
7	KSRB 4-6.1: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, labour complete as per specifications. Specifcation No. KBS 4.6.2	Work done up to the billed quantity and quantity is satisfactory
8	KSRB 4-6.4: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surfaces such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2	Work done up to the billed quantity and quantity is satisfactory
9	Providing and laying cement concrete using 20mm and downsize granite coarse aggregates and fine aggregates of ready mixed concrete (RMC) for RCC works laid in 15cms thick layers and well compacted vibrating, curing, finishing with necessary cement mortar, with all lead and lifts etc., complete (exclusive of cpost of steel and fabricaton charges) Ready Mixed Cement Concrete M 20 for Raft foundation, Column, Footing, main and secondary beams.	Work done up to the billed quantity and quantity is satisfactory
10	KSRB - 4.9.2: Providing TMT steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, palcing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3.	Work done up to the billed quantity and quantity is satisfactory
11	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2.	Work done up to the billed quantity and quantity is satisfactory
12	Refixing Stone Slabs of Drains and pointing in C.M (1:3)	Work done up to the billed quantity and

		quantity is satisfactory
13	Providing and fixing RCC Precast cover slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)	Work done up to the billed quantity and quantity is satisfactory
14	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)	Work done up to the billed quantity and quantity is satisfactory
15	KSRRB M400-19: Construction of Median and island above road level with approved material deposited from borrowpits, spread, sloped and compacted as per Clause 400.7 complete as per specifications. MORTH Specification No.407	Work done up to the billed quantity and quantity is satisfactory
16	KSRB 14.6-1: Providing & laying heavy duty cobble stones 60mm thick interlock pavers,using cement & course sand for manufacture of blocks of approved size ,shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (Avg thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Work done up to the billed quantity and quantity is satisfactory
17	KSRB 14.6-1: Providing and resetting of available heavy duty cobble stones 60mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm jOints, final compaction of paver surface joints into its final level, including thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between labour and HOM of machineries complete as per specifications	Work done up to the billed quantity and quantity is satisfactory
18	Providing and fixing Pre cast solid concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting, including formwork, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete	Work done up to the billed quantity and quantity is satisfactory
19	Removing and Resetting of Kerb Stones	Work done up to the billed quantity and quantity is satisfactory
20	KSRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8	Work done up to the billed quantity and quantity is satisfactory
21	KSRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per	Work done up to the billed quantity and quantity is satisfactory

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	specifications. MORTH Specification No.301	
22	KSRRB M400-6.2: Construction of granular sub-base by providing Close graded material, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, spreading in uniform layers with mortar grader on prepared surface and compacting with vibratory roller to achieve the desired density, complete as per specifications. A Plant Mix methad For Grading II Material	Work done up to the billed quantity and quantity is satisfactory
23	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406	Work done up to the billed quantity and quantity is satisfactory
24	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502	Work done up to the billed quantity and quantity is satisfactory
25	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5	Work done up to the billed quantity and quantity is satisfactory
26	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5	Work done up to the billed quantity and quantity is satisfactory
27	KSRRB M500-16. Providing and laying dense bituminous macadam 50-75mm compacted thickness with 4.5% VG-30 Bitumen using 40/60 TPH capacity H.M.P, using crushed aggregates of grading II, premixed with VG 30 grade bituminous binder and transporting the hot mix to work site, laying with mechanical paver to the required grade level and alignment rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10, complete in all respects complete as per specification MORTH specification No. 507	Work done up to the billed quantity and quantity is satisfactory
28	KSRRB M500-19. Providing and laying bituminous concrete 40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 6% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509	Work done up to the billed quantity and quantity is satisfactory
29	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising	Work done up to the billed quantity and quantity is satisfactory

	glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.	TEJUS
30	Providing and fixing of Reflective Raised Pavement marker (RPM's) / Cat eyes / Road studs confirming to ASTM D4280 type H, having reflective panels made of prismatic lens of total internal reflection, the prismatic lens should be electronically fixed (welded) to the body made of polycarbonate mould, with a height of 20mm, size of 130mm x 105mm and reflecting area of 13sqm with the slope of retro reflective surface within the limit of 35 + 5 degree to the base on either side. The marker shape ll display an initial minimum luminous intensity of 279mcd/ lux at an entrance angle of zero degree and observation angle of 0.2 degree. The corresponding values for 20 degree entrance and 0.2 degree observation angle shall be 112 mcd / lux with color multiplying factor on either cases for white, yellow and red markers being 1.0, 0.6 and 0.25 respectively. The RPM's should be fixed by using two numbers of polymer shanks using appropriate adhesive as recommended and certified by the RPM manufacturer. The raised pavement marker should support a sufficient minimum load 13635 Kg in accordance with ministry specification.	Work done up to the billed quantity and quantity is satisfactory
31	KSRRB M800-36. Provision of red fluorescent with white reflective Nos sleeve traffic cone made of low density polyethylene (LDPE) material with a square base of 390 x 390 x 35 mm and a height of 770 mm, 4 kg in weight, placed at 1.5 m interval, all as per BS: 873 complete as per specifications	Work done up to the billed quantity and quantity is satisfactory
	EIRL	
1	KSRB 5-14 : Providing and constructing precast concrete solid blocks with compressive strength not less than 3.5 Newton per sqmm with cement mortar 1:4 masonry (quoin, Jamb, closer blocks) with solid concrete blocks of size 40x20x20cms conforming to loS: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications.	Work done up to the billed quantity and quantity is satisfactory
2	KSRB 5-14 : Providing and fixing ornmental Delhi Benches including cost of materials labour as per specification (data Rate Approved)	Work done up to the billed quantity and quantity is satisfactory

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